DOCUMENT RESUME

ED 258 362 EA 017 860

TITLE	Educational Effectiveness: Curriculum Articulation.
INSTITUTION	Minnesota State Dept. of Education, St. Paul.
PUB DATE	85
NOTE	24p.
PUB TYPE	Guides - Non-Classroom Use (055) -- Reports - Descriptive (141)
EDRS PRICE	MF01/PC01 Plus Postage.
DESCRIPTORS	*Articulation (Education); *Core Curriculum; *Curriculum Design; *Curriculum Development; Curriculum Evaluation; Elementary Secondary Education; Horizontal Organization; *Instructional Design; *Integrated Curriculum; School Law; State Curriculum Guides; State School District Relationship; Vertical Organization
IDENTIFIERS	Minnesota; Minnesota School Effectiveness Program; North Central Association of Colleges and Schools

ABSTRACT

This module explicates the concept of curriculum articulation, one of the instructional characteristics of effective schools set forth in the Minnesota School Effectiveness Program. Curriculum articulation and organization describe the scope and sequence of a curriculum, as it relates to the goals that a school district has for its students. Following an extended definition and a brief research summary, a set of procedures and considerations for curriculum development is presented, based on the Minnesota Planning, Evaluation, and Reporting (PER) Law, and consistent with North Central Association (NCA) accreditation standards. Accordingly, an outline is presented of the revised PER legislation as amended by the 1984 Minnesota Legislature. The subsequent sections include suggestions on how the PER law can be effectively addressed with techniques and procedures that are also consistent with curriculum articulation and organization in five main areas: (1) curriculum planning and goal setting, (2) curriculum evaluation, (3) reporting to the public, (4) processes and procedures in curriculum, and (5) models of curriculum improvement plans. Four organizational resources are also listed and described, and a short bibliography is included. (TE)

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EDUCATIONAL EFFECTIVENESS CURRICULUM ARTICULATION

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EA 017 860

Minnesota Department of Education
1985

CHARACTERISTIC 8: Curriculum articulation and organization with appropriate time devoted to planned, purposeful instruction focused on the desired outcomes and coordinated across grade levels

DEFINITIONS AND BACKGROUND INFORMATION

Curriculum articulation and organization describe **what** (curriculum) the school district wants students to know and be able to do (learner outcomes). The order in which the parts of the curriculum are taught and the way it is structured or put together determine curriculum articulation and organization. Scope and sequence is a means of describing curriculum organization in terms of the order in which outcomes are addressed (vertical articulation or sequence) and the relationships of various topics and outcomes across the curriculum (horizontal articulation or scope).

If the curriculum is described as the "what", then "**how**" students are taught, including materials, methods and learning activities might be called instruction. **How well** students master the learner outcomes may then be described as a part of evaluation.

Curriculum, which includes the school district philosophy, mission, goals, and learner outcomes is usually thought of as being district-wide, i.e., the same goals and learner outcomes apply to all students in a school district. At the same time the objectives, including individual course objectives and classroom instructional objectives are usually thought of as being specific to the building or classroom level. Since curriculum is usually district-wide in school systems, that will be the approach in this module. This does not contradict the school site management and building autonomy indicated in Characteristic No. 4, as those considerations have to do with the **means** by which goals and expectations are met rather than the curriculum goals themselves.

A school which has organized curriculum and instruction to match desired outcomes and goals:

- determines objectives and articulates those objectives across grade levels
- ensures that the textbooks, activities, and curriculum match desired student outcomes
- increases students' successful engagement rate of academic learning time
- trains teachers in techniques to increase academic learning time
- organizes school activities to maximize learning time (instruction is rarely interrupted)
- presents rules, procedures and assignments to students in a clear, detailed manner
- determines that content is appropriate given the student's prior learning

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RESEARCH SUMMARY

Matching the content, objectives, and activities to be taught, with the desired outcomes identified by the school is a worthwhile activity. The curriculum should be organized to reflect the skills and objectives to be covered; this organization increases the likelihood that those skills and objectives will actually be taught (Squires, et al., 1981). Once the goals and expectations for student performance have been identified, the curriculum should be reviewed to ensure that what is taught aligns with those stated goals and expectations.

Also, the amount of time-on-task that is devoted to the content and objectives to be covered should be considered. The assumption underpinning time-on-task is that the more time devoted to a topic, the better grasp a student is likely to have on the topic (Denham & Lieberman, 1980; Fredrick, 1980; Gauthier, 1982; Gross, 1983; Handler, 1972; Harnischfeger & Wiley, 1976; Lanier & Glassberg, 1981; Lezotte, 1982; Murphy, Weil, Hallinger, & Mitman, 1982; Squires, et al., 1981). A distinction has been made between sheer quantity and quality of time. Academic learning time (ALT) has been shown to be the best measure of active time-on-task. ALT is characterized by a high rate of successful engagement by students in academic learning activities.

ACTIVITIES FOR IMPLEMENTATION

A school with an active and systematic curriculum development system is already addressing many of the 15 characteristics of effective schools. Schools which are members of districts which are actively addressing and meeting the requirements of the Minnesota Planning, Evaluation and Reporting (PER) Law as amended by the 1984 legislature are well situated for dealing with the various aspects of this characteristic. If, in addition, a school meets North Central Association (NCA) accreditation standards, it is also probably meeting the standards of good curriculum development processes which are implied by this characteristic. The intent of this section is to present some procedures and considerations for developing aspects of this characteristic which are consistent with the PER Law, and appropriate NCA guidelines for curriculum development. In order to facilitate planning so that schools need not address these separately, the framework for addressing this characteristic will be the requirements of the revised PER Law. This approach was chosen because in addressing the PER Law systematically, many of the components which make up this characteristic will be attended to as will many of the NCA guidelines.

The PER Law, in essence, includes a description of a curriculum organization and development system which includes long accepted principles of curriculum articulation and organization. The evaluation processes required in the PER Law are also consistent with NCA evaluation procedures. In addition, the PER Law also requires participation of community members in goal setting, evaluation and reporting to the public. The relevant parts of the PER Law have been exerpted and are included below.

AN OUTLINE OF THE REVISED PLANNING, EVALUATION, AND REPORTING (PER) LEGISLATION

As Amended by the 1984 Legislature (Exerpted From a Monograph Produced by the Minnesota State Department of Education, May 2, 1984)

123.74 FINDINGS

A process for curriculum evaluation and planning is needed for continued improvement of the educational program, and to allow for better evaluation of educational programs by local communities.

123.741 PLANNING, EVALUATION AND REPORTING PROCESS

Subdivision 1

A. The local school board shall adopt a PER policy which includes:

1. instructional goals, (The term "curriculum" can be used in place of "instructional" to better communicate the intent of the law according to personnel at the Minnesota State Department of Education.)
2. measurable learner objectives for the district,
3. a process for achieving these goals,
4. procedures for evaluating, and
5. procedures for reporting progress toward the goals.

B. (The) local school board shall review the PER policy annually.

C. (The) local school board shall identify instructional (curricular) goals and measurable learner objectives to be addressed during the current school year.

D. The local board is encouraged to develop the PER Policy in consultation with the staff of each school building.

Subdivision 2

A. The local school board shall instruct administrative and professional staff to develop an instructional (curriculum) plan to implement the district PER policy.

B. To the extent possible the instructional (curriculum) plan shall include instructional effectiveness processes (reference M.S. 121.608) and integration of curriculum and technology (reference M.S. 129B.33).

C. For hard to measure instructional (curriculum) goals, the instructional (curriculum) plan shall include other appropriate means to direct and evaluate progress.

Subdivision 3

A. The local school board shall establish a curriculum advisory committee to provide for active community participation in:

1. developing the district PER policy and instructional plan,
2. the identification of annual instructional goals and measurable learner objectives,
3. the evaluation process, and
4. reporting to the public.

B. The advisory committee shall include administrative staff, teachers, parents, and other residents of the community.

C. To the extent possible, parents and other community residents should make up two-thirds of the committee.

Subdivision 4

A. An evaluation of progress shall be conducted each year.

B. The professional evaluation component of the annual evaluation:

1. shall utilize test results, and
2. may include other performance data and faculty interpretations and judgments.

C. The consumer evaluation component of the annual evaluation shall include:
   1. opinions of students,
   2. opinions of parents, and
   3. opinions of other residents of the school district.

Subdivision 5

A. Upon completion of the annual evaluation the local board shall review the results and adopt school district improvement plans.

B. The improvement plans shall describe actions to be taken to correct weaknesses evident from the results of the district evaluation process.

Subdivision 6

A. By September 1 of each year, the local board shall adopt a PER report which shall include:
   1. the annual PER instructional goals,
   2. evaluation of the annual PER instructional goals,
   3. results of professional evaluation including assessment data,
   4. results of consumer evaluation,
   5. annual school district improvement plans, and
   6. every other year, beginning with the 1984-85 school year, the report should include an evaluation of the district assessment program.

B. The PER report shall be disseminated to all residents of the district by publication in the newspaper, newsletter, or through the mail.

C. A copy of the report which was disseminated to the community shall be sent to the commissioner of education by September 1 of each year.

Key elements of effective curriculum articulation and organization practices which are contained in the PER Law include: the setting of goals and objectives, a process for achieving the goals and objectives, evaluation of progress in working toward the goals and objectives, making improvement plans based on the results of evaluation and involvement of administrators, teachers and (where appropriate) members of the public in all stages of the process. In other words, an effective curriculum organizational plan includes clear statements of expected learning outcomes for students, reasonable measurements and judgments of whether the students are achieving the expected outcomes (evaluation), and plans for improvement based on the results of the evaluation. Note that the purpose of the evaluation in PER is to determine to what extent curricular goals are met and to base improvement plans on the results of evaluation.

It should be stated that even though the PER Law is intended for school districts rather than individual buildings, the same general principles of curriculum organization apply. It is assumed that individual buildings would

adhere to the principles insofar as they were consistent with the broader district policies and did not violate them. At the same time district policies need not be so specific that building autonomy at the grade, department or classroom level is completely sacrificed. A common way of dealing with the district vs. building issue is to develop a curriculum plan (**what** is taught) which is district-wide but to allow (or encourage) variation in delivery systems or instructional strategies (**how** it is taught) within and among buildings. Thus there can be various means of attaining the common, district-wide curricular ends or outcomes.

TECHNIQUES AND PROCEDURES

The following sections will include suggestions on how the PER Law can be effectively addressed with techniques and procedures which are also consistent with curriculum articulation and organization in effective schools and with NCA standards for curriculum development and review.

They will be divided into five main areas: A. curriculum planning and goal setting, B. curriculum evaluation, C. reporting to the public, D. processes and procedures in curriculum, and E. models of curriculum improvement plans.

A. Curriculum Planning and Goal Setting (PER Law 123.741, subdivisions 1 and 2. NCA Standards: Elementary Schools - I and II; Junior High/Middle Schools - I, II and III; Secondary Schools - I and III.

The commonly accepted schemes of dealing with curriculum organization and development go at least as far back as the curriculum development processes suggested by Ralph Tyler in the 1950's. Essentially, a set of broad goals or purposes is derived from a statement of school philosophy. The philosophy is a statement of basic values and beliefs of the society and school community, the staff, and hopefully, of the students. In addition, the needs of the students and how they learn should be taken into consideration.

The purposes of the school (sometimes called the mission) might be the same ones which are identified as in School Effectiveness Characteristic No. 1. Some of these statements of purposes or mission have to do with the school curriculum or educational program while others might deal with such non-curricular areas as budgeting or other aspects of management. It is the curriculum-related aspects which are of interest in this module.

A second level of goals is more specific than the mission statement. However, they are still broad enough so they can address several grade levels. They integrate philosophy and mission into student goals and are measurable only in broad terms.

Next come the more specific learner outcomes. These are based on goals, provide content for objectives and are measurable. Examples might be learner outcomes for K-12 social studies or for mathematics. Figure 1 is a diagram showing possible relationships among the philosophy and various levels of goals and objectives in a school. It has been adapted from a chart entitled "Essential Elements, Learner Outcome Based Education," 22 October, 1984, Minnesota State Department of Education. It has been described as the model for developing "Model Learner Outcomes" (a revision of SELO's) for the state assessment program.

Figure 1. Possible Relationships Among Levels of Goals/Expectations

VALUES - Defines basic principles of education.

1. Based on professional and public concerns regarding education.
2. Provides a basis for a philosophy.
3. In general language not unique to education.
4. Not measurable.

PHILOSOPHY - Integrates values to define basic precepts of education.

1. Based on values and beliefs.
2. Provides a basis for decision making at all levels of the education system.
3. In general language not specific to education.
4. Not measurable.

MISSION - Legislative assignment to the education system.

1. Based on legislative concerns regarding general availability and uniformity of the quality of the education system.
2. Provides educators and the public with parameters of expectations.
3. In language specific to education but readily understood by non-educators.
4. Not measurable but gives indication of what is to be measured.

GOALS - Integrates philosophy and mission into student goals.

1. Based on mission statement and compatible with philosophy.
2. Provides educators with form and content for outcomes and expectations for the public.
3. In language specific to education but readily understood by non-educators.
4. Measurable only in the broadest terms.

LEARNER OUTCOMES - The knowledge, skills, and attitudes to be developed by students in each subject area.

1. Based on goals.
2. Provides content for objectives and topics for development of assessment bank.
3. In detailed language specific to education process and content.
4. Measurable by accumulation of measurement of objectives.

OBJECTIVES - Specific outcomes for each course.

1. Based on learner outcomes and district/building course design.
2. Provides specific scope and sequence of content for each course.

3. In detailed language specific to education process and content.
4. Directly measurable.

INSTRUCTIONAL OBJECTIVES - Daily lesson plan objectives.

1. Based on objectives.
2. Provides sequence and content for daily lessons.
3. In detailed language specific to education process, content, and methodology.
4. Directly measurable.

Figure 1 shows an hierarchical relationship among the levels of goals and expectations. Figure 2 shows possible organizational levels as well as a suggested heirarchy of responsibilities. It should be noted that the detail and specificity of the goals/expectations as well as the organizational levels and responsibility delegations will necessarily be less sophisticated and more flexible for smaller schools and school districts. For example, a small school might have only a philosophy statement with goal statements followed by learner outcomes and instructional objectives. It is also understood that in many small districts the district and the building are essentially the same if all students are in one building. Also, a small number of people would be involved in establishing the various levels of goals and expectations in a small school.

It should be noted that Figure 2 is intended only as a guideline. For example, some schools may choose to deal with learner outcomes at the building rather than the district level. Generally speaking, the interface between building and district wide responsibilities is also the dividing line between PER concerns and building concerns. Another way of saying this is that the district concerns are primarily curriculum based and as responsibilities move closer to buildings and classrooms, the concerns become more instructional in nature.

Figure 2. Establishment of Goals/Expectations

Type of Statement	Organizational Level	Typically Established By
Values	School District	District Staff, Community members, Students
Philosophy	School District	School Staff, Community Members, Students
Mission	School District	District Staff
Goals	School District	Staff Committees
Learner Outcomes	School District	Subject Area Staff Committees

Type of Statement	Organizational Level	Typically Established By
Objectives	Buildings, Classroom/Grade Level	Teachers
Instructional Objectives	Classroom	Teachers

Recall that Characteristic No. 8 deals with "curriculum articulation and organization...". What does this mean? Many schools have existing statements of values and philosophy, and related school mission statements, goals, and learner outcomes and objectives in some form. These should be related in a heirarchical manner in such a way that school goals are more specific than the school philosophy statement but still are consistent with it (See Figure 1). At the same time the school goals provide an "umbrella" of guidance and direction for the more specific learner outcomes and objectives. This is an example of vertical articulation of goals and objectives. Horizontal articulation deals with the planned complementary relationships among the components (e.g., subjects or areas of study) across the curriculum at a given point such as a grade level. A curriculum that shows a balance among academic, vocational subjects, and the arts in which relationships among learnings across the curriculum are obvious might be referred to as having horizontal articulation. Terms which are related to horizontal and vertical articulation and are sometimes used interchangeably with them are scope and sequence. Sometimes the learner objectives are included on a scope and sequence chart or a curriculum guide. However, in other schools scope and sequence charts and curriculum guides are merely listings of content to be learned without including the learner objectives.

Clear statements of purposes, goals and objectives which are articulated both vertically and horizontally are difficult to develop, establish and maintain. Their establishment requires a good deal of attention on a continual basis by a staff which is committed to excellence.

Some schools will find it necessary to start almost from the beginning, others will need to update and revise presently stated goals and objectives. In either case (and those inbetween) the intents (philosophy, goals, objectives) must be stated clearly as a first step in curriculum articulation and design. Once the intents are established and validated, regular evaluation can help to determine the extent to which the intents are being accomplished. Only then can reasonable improvement plans, based on discrepancies between intents and actual outcomes, be devised.

Learning activities, which are the heart and soul and the vehicle of the instructional process flow from the learner objectives or outcomes. (Note the terminology: **learner** objectives and **learning** activities which are intended to denote the emphasis on the learner.) Although equally important as curriculum articulation and design, learning activities and the instructional process will not be dealt with further in this module. See Characteristic Nos. 10 through 15 for more on instructional matters.

Suggested procedures and techniques for systematically developing intents on an ongoing basis are included in Section D.

CURRICULUM MAPPING

Once the learner outcomes and objectives are established, an obvious question to experienced teachers is, "Do these statements of outcomes and objectives accurately describe what is being taught in the classrooms?" In many cases the answer is "no." A technique for determining the actual curriculum that teachers teach in classrooms is called "Curriculum Mapping." It has been developed and advocated by Fenwick English (1980). A curriculum map is a reconstruction of the real curriculum that teachers have taught. It is descriptive rather than prescriptive (as are curriculum plans or sets of objectives). Curriculum mapping attempts to describe the curriculum that currently exists. It is not an end in itself but a process for determining what is actually being taught. School personnel can use curriculum mapping to work toward making a better match between the intended (written) curriculum and the real (taught) curriculum.

In making a curriculum map teachers simply individually report the time spent teaching to each of the topics, concepts or curricular goals or objectives. This module will focus on mapping of time spent on objectives rather than topics or concepts. A typical curriculum map indicates the time devoted to each goal or objective (depending on the level of specificity desired) in each classroom or other learning unit. A learning unit might also be a grade level or departmental unit.

Combining the curriculum maps of all teachers at a grade level, in a department, or school, can give a staff a composite picture of time spent on each of a selected number of objectives. Mapping reveals to a staff the relative amounts of time being devoted to each goal or objective and the amount of variability among teachers for each objective, - one English teacher might spend 25% of his/her time teaching spelling while another might only devote 5% to spelling. Also, the match between what is intended (goals, objectives, etc.) and what is actually being taught can be determined. If a mismatch between intents and what is actually taught, exists, it could be a reason for test results which are less than desirable. On the other hand, if the testing program is geared to measure progress on intended outcomes and teachers are teaching to achieve those outcomes (a good match between intended and real curriculum) the test scores should show satisfactory achievement by students.

For further information on curriculum mapping and sample curriculum maps, see the publications by Fenwick English (1980) and Dennis R. Glasgow (1983) included in this module and listed in the bibliography.

ACADEMIC LEARNING TIME

Experienced teachers know that many factors in addition to a well articulated curriculum affect student achievement. These include motivation, the home environment, student abilities and community support as well as others. Although it's not a new field of study (Karweit 1984), in recent years much attention is being given to use of time and its relationship to learning. As one would expect, the more time that is devoted to working toward objectives, the more learning occurs, at least for some kinds of learning (e.g., skills, lower level thinking).

Simply increasing Time-on-Task for students can be helpful in improving learning but new findings indicate that the problem is more complex (Karweit, 1984). David Berliner has stated (Brandt, 1982) that probably 25 per cent of teachers are under-allocating time devoted to certain areas of the curriculum. He claims that those teachers could make marked improvements in instruction by just changing their time allocation--the amount of time allocated to teaching a topic.

Further, Berliner has also stated that perhaps 70 per cent of teachers could benefit by improving how the allocated time is used in their classrooms; i.e., by increasing the amount of **engaged** time. Engaged time, essentially, is the portion of allocated time in which students are doing what they're supposed to be doing and are focused on the teacher's objectives. The more engagement, according to researchers, the more learning (see Figure 3).

Figure 3. Class Time Distribution
(adapted from Sparks and Sparks, 1984)

I. Allocated Time Includes Engaged Time plus Non-Engaged Time Allocated to Special Objectives

A. Engaged Time - Examples of students working toward objectives.

With Teacher
- listening to teacher presentation
- responding to questions
- seat work, practice
- drill
- discussion
- student presentation

Independent or group work
- written work
- reading
- projects
- labs
- tests
- using media/technology

B. Non-Engaged Time - Examples of activities not directed to objectives

Logistics
- attendance taking
- handing in and distributing papers and materials
- transitions

Behavior Problems
- socializing
- waiting
- day dreaming

Students must not only be engaged in academic tasks, but Berliner and others have also found that a high level of success on academic tasks is related to higher student achievement, at least for certain kinds of learning. Thus,

Academic Learning Time is generally thought of as having three components: allocated time, engaged time and success rate. Increasing all three for specified objectives or components of the curriculum should result in higher student achievement in those areas.

Characteristic 8 states ... "curriculum articulation and organization with appropriate time devoted to planned, purposeful instruction focused on the desired outcomes and coordinated across grade levels." This section attempted to clarify this characteristic and to suggest some ways of addressing it. The following section will describe some monitoring and feedback processes which are intended to ensure continuous maintenance and development of a well articulated curriculum.

B. Curriculum Evaluation and Improvement Plans (PER Law 123.741, subdivisions 1, 2, 4 and 5. NCA Standards: Elementary Schools - V (5.11), VI, XIII, and XIV; Junior High/Middle Schools - III (3.8) and XI; Secondary Schools - III (3.14, 3.16), VII, and XI.)

A dictionary definition of evaluation would include phraseology such as "to determine the value or worth" of something. There are scores of systems, methods and procedures for determining the "value" of schools and school programs. Hence, it seems necessary that the types of evaluation alluded to in this module be limited to evaluation of the curriculum philosophy, goals and objectives (i.e., goal based evaluation), and the curriculum organization and design.

The evaluation component of the PER Law requires both a professional staff evaluation component and a consumer evaluation component. The professional staff component is to utilize test results and include local assessment data. The staff evaluation should also relate directly to the annual PER goals. The consumer evaluation component of PER is to include the opinions of students, parents, and other residents of the school district and can be done independently of, in conjunction with, or in response to the professional staff analysis of the evaluation results.

A well designed curriculum in which there is clear articulation among philosophy, goals and objectives or outcomes lends itself naturally to goal-oriented evaluation. Such evaluation is based on the principle that the school curriculum program should be judged in terms of what it is striving to achieve (philosophy, goals, objectives) and according to the extent to which it is meeting the needs of the community and students it serves. This is essentially the approach to school program evaluation advocated by the National Study of School Evaluation and the North Central Association of Colleges and Schools. Most schools choose to concentrate on evaluation of only three to five curricular areas per year on a four to six year cycle. (See Section E for sample curriculum development cycles.)

The approach suggested is that the basic questions in curriculum evaluation are whether, and to what extent, the curricular outcomes specified in the school philosophy, goals and objectives are being achieved. Related questions might include whether other, unintended goals are addressed, the degree of success of particular students or segments of the student population and the importance of the outcomes relative to each other. However, the bottom line might be stated as "Are we accomplishing what we say we intend to accomplish?"

The PER Law requires that the evaluation include testing. The testing is to include (but is not limited to) local assessment data as developed by the Minnesota Department of Education (Piggyback Testing). Annually, each district is to conduct such an assessment for at least one curriculum area in at least three grade levels. The Minnesota Assessment Program provides for the local selection of items which match the local goals and objectives. Tests developed locally by staff can also be included. In any case there should be a close alignment between the intended outcomes and the evaluation of whether they are being achieved.

In addition, summary results of standardized tests such as SAT, ACT, PSAT, CTBS, etc., may be used to supplement evaluation efforts but it is much more difficult to align these with locally developed school goals and outcomes.

For those intended outcomes which are difficult to measure with tests (e.g., goals dealing with the affective domain, creativity, etc.), other performance criteria and/or faculty interpretations or judgments should be used.

Opinions and surveys are additional sources of information about intended outcomes (or at least peoples' perceptions about them). The National Study of School Evaluation (NSSE), of which the North Central Association of Colleges and Schools is a member, has published several materials which were designed for school self-studies and which might prove helpful in evaluating the curriculum organization and design in general as well as specific subject areas. Recommended materials from NSSE include: Evaluative Criteria (Secondary Schools) 5th edition, Junior High School/Middle School Evaluative Criteria, Elementary School Evaluative Criteria, and Secondary School Evaluative Criteria: Narrative Edition.

The NSSE also publishes a Student Opinion Inventory, a Teacher Opinion Inventory, and a Parent Opinion Inventory. Although these inventories are general in nature and do not directly address locally developed goals and objectives they can be helpful in at least two ways. Many of the general questions are common to all three questionnaires so comparisons of responses by various populations can be easily made. A second use would be to use the questionnaires as sources and adapt questions or add new questions to the inventories which would address local goals and objectives. The questionnaires are prepared as simple, multiple choice written instruments but could also be adapted to use in interview situations. Also, they could serve as a basis for developing a similar inventory to collect opinions of "other residents of the school district" as required by the PER Law.

Another resource which can be helpful in evaluating the curriculum organization and procedures in general through a series of questions is the booklet entitled Looking In Your School: A Workbook for Improving Public Education, published by the National PTA. This booklet also has the inherent limitation of presenting evaluative questions which are not necessarily aligned with local school goals and objectives.

In summary, a curriculum which is well organized and articulated is one which has clearly stated philosophy, goals, and objectives. Such a curriculum is also a dynamic rather than a static entity which is continually improved, with the basis for the improvement being a determination of whether and to what degree the intended outcomes are achieved. This determination of degree of

achievement of intended outcomes is the evaluation component. In such a systematic approach, the evaluation criteria are aligned with the statements of intent. The areas in which it is determined that intended outcomes are not being achieved to the desired degree form the basis for improvement plans.

The PER Law (Subdivision 5) states that "...improvement plans shall describe actions to be taken...to correct any weakness evident from the results of the district evaluation process." NCA standards on evaluation also include the development of improvement plans based on evaluation results.

Improvement plans are typically made annually and are based on the results of the annual evaluation process. For example, if a district chose to evaluate four areas - math, industrial arts, reading, and art - in a given year, the results of that evaluation might indicate areas for improvement. These areas would then form the basis for improvement plans in these areas for the following year or years. These might take the form of goals, e.g., "to increase by 10% the percentage of fourth graders who can successfully solve word problems in math," or "to increase the participation in ninth grade art electives by 15%." Of course, the evaluation should be according to stated goals and objectives. The improvement plans should also be consistent with those goals and objectives and might include new goals formed in attempts to address unforeseen problems uncovered by the evaluation process.

Just as the evaluation process should encourage public or "consumer" participation, the improvement plans should as well. "Consumers" (students, parents, other residents) could develop independent recommendations, work with the staff in developing recommendations or could provide reactions to staff-developed proposals for improvement plans.

In any case, the district school board must review the annual evaluation results and adopt appropriate district improvement plans as required by the PER Law.

C. <u>Reporting To The Public</u> (PER Law 123.741, subdivision 6. NCA Standards: Elementary Schools - X; Junior High/Middle Schools - XII; Secondary Schools - XIII.)

Much of the criticism of schools recently and through decades past has centered around claims that the schools are not satisfying the needs of the communities they serve. A school can have a well planned curriculum which satisfies all other requirements, but if it doesn't serve the community and students it will soon lose public confidence and support.

A key element in generating public involvement in the schools is to report regularly and accurately to all community residents the goals, how progress toward goals is evaluated, evaluation results and improvement plans. Public involvement as described in Section B on evaluation and improvement, begins with information. A well-informed public is likely to be more involved in appropriate curriculum matters likely resulting in a curriculum which is not only well articulated but responsive to the needs and aspirations of the community. A positive side-benefit of public involvement is usually a community which is supportive of its schools and curriculum programs.

Minnesota is somewhat unique as a state in the degree of participation in curriculum matters which is specified by law. This comes from a tradition of the importance of control of schools by local communities. This tradition was enhanced by the state legislature in 1976 when the original PER legislation was passed.

Subdivision 6 of the PER Law clearly states the specific requirements for reporting to the public. These include an annual report, due by September 1, which must include:

a. the annual PER instructional goals;
b. results of professional staff evaluation;
c. results of consumer evaluation; and
d. annual school district improvement plans.

D. Processes and Procedures in Curriculum Articulation and Organization

Many school districts already have in operation very effective curriculum development processes. It is not the intent of the Minnesota School Effectiveness Program to replace those processes as, if done well, those processes already include components of many of the characteristics of effective schools. Thus, the purpose of this section is to provide some general guidelines for systematic curriculum improvement processes for schools which may be in various stages of developing their curriculum procedures. Obviously, smaller school districts need not have procedures which are as complex, elaborate and formal as larger districts, but the basic principles of openness, participation by representatives of all groups, and consistency in staying with a systematic process should be common to all effective school districts.

These processes typically include a cyclical review of specific programs in the curriculum wherein two to four programs are annually involved in one of the steps in a four to seven year cycle. An example of such a cycle is included in Figure 3. Additional, specific examples are referred to in Section E, following this section.

Figure 3. A Five Year Curriculum Review Cycle

Program Groups	Year 1	Year 2	Year 3	Year 4	Year 5
Science, Health, Guidance	Evaluation/ Testing	Review/Make Improvement Plans	Implement Improvement Plans	Maintain/ Gather Data	Maintain/ Gather Data
Physical Education, Math, Foreign Language	Maintain/ Gather Data	Evaluation/ Testing	Review/Make Improvement Plans	Implement Improvement Plans	Maintain/ Gather Data
Language Arts, Reading, Media Services	Maintain/ Gather Data	Maintain/ Gather Data	Evaluation/ Testing	Review/ Make Improvement Plans	Implement Improvement Plans
Social Studies, Vocational	Implement Improvement Plans	Maintain/ Gather Data	Maintain/ Gather Data	Evaluation/ Testing	Review/Make Improvement Plans

Program Groups	Year 1	Year 2	Year 3	Year 4	Year 5
Art, Music Special Education	Review/ Make Improvement Plans	Implement Improvement Plans	Maintain/ Gather Data	Maintain/ Gather Data	Evaluation/ Testing

A curriculum review cycle such as in Figure 3 would involve a school district in a systematic review of programs. Although it relates primarily to the district curriculum and programs, the review process will also certainly raise concerns about instruction or delivery of programs. As suggested in Characteristic Nos. 3 and 4, these concerns should be dealt with at the building/classroom level.

A systematic curriculum review cycle also addresses and supports the requirements of the PER Legislation which calls for systematic evaluation, review and improvement of curriculum. A cycle allows a school district to focus on a limited number of program groups which are at various stages in the cycle each year rather than attempting the frustrating task of a comprehensive review of all programs each year, or, as occurs more frequently, concentrating only on problems as they come up. The latter approach usually results in fragmented, disjointed stamping out of brush fires and a curriculum which is lacking in articulation and organization.

The Evaluation/Testing phase (Fig. 3) would include evaluation of the identified programs according to the intents, goals and objectives which have been specified. As stated in the PER Legislation, the evaluation should include the results of professional evaluation including assessment (testing) and results of consumer evaluation.

In the following phase (Review/Make Improvement Plans), a review of evaluation results should result in the establishment of improvement plans. Improvement Plans might include recommendations for changes in the program's philosophy, goals or learner outcomes, changes in course offerings, changes in instructional materials and resources, or changes in the program's evaluation processes.

The Implementation Phase is a period of carrying out the improvement plans developed in the previous phase. Typical activities include acquisition of instructional materials, inservice training for staff members in using new materials and strategies, and providing support for students in making transitions so that the integrity of the articulation (scope and sequence) is preserved as much as possible as they experience the curriculum.

Although Figure 3 shows a design in which each Phase lasts one year, circumstances might be such that it is more feasible to contract or extend the time period for various reasons. The one phase per year parallels school calendars and school years but should not be thought of as limiting, as occasionally schools find it practical to make adjustments and adaptations.

The Maintenance/Data Gathering phases in Figure 3 might be thought of as an example of a two year phase. This phase might be one year or three-four years in length depending upon a districts' resources, size, and other factors. Typically during this phase the programs in it operate as changed and implemented in the previous phases. However, each year the program makes use of an established review and evaluation plan to gather data for use when it re-enters the Evaluation/Testing phase.

Important considerations in any systematic curriculum review process will include the following:

1. General Principles in a Systematic Curriculum Review Process

   a. A curriculum decision making process should be established, agreed upon by all groups and adopted by the board of education.
   b. Participants in the curriculum decision making process should include representatives of the following groups: students, parents, other citizens, teachers, and administrators. (Some of these representatives are frequently also members of the PER Committee.)
   c. The curriculum decision making process should meet State of Minnesota requirements, including those of the PER Law.

2. Typical Committee Structure and Operation

   a. A district steering committee whose role is to manage the curriculum decision making system and to provide leadership for curriculum improvement. In some districts the steering committee also serves as the PER Committee.
   b. Program subcommittees to work in cooperation with the steering committee. Program subcommittees are responsible for program development and articulation within each program; e.g., the math program or the social studies program. As in the case of the district steering committee, the size of each subcommittee is typically a function of the size of the school district. Each program subcommittee typically has a representative on the district steering committee. Some typical program subcommittees might include: science, mathematics, language arts, social studies, reading, art, music, media, foreign languages, guidance, vocational education, physical education, etc.
   c. Time for curriculum development work by staff members should be provided or compensated for. The research upon which other characteristics (e.g., Nos. 6 and 7) and organizational change are based indicates that activities such as curriculum development should be "job embedded;" i.e., they should be supported as a part of the job and duties of staff rather than volunteer efforts which are contributed on weekends and in the evenings. There are various ways of supporting staff members for committee work which are employed in many schools. These include "in-service day" activities, extra pay for department heads who would also serve on committees, release time with substitutes provided, hourly pay for after school meetings, and summer hours for curriculum improvement.
   d. Committee and subcommittee chairpersons provide leadership for their groups and serve as liaisons between their committees and the staff.
   e. The steering committee and the program subcommittees should, to the extent possible, include representative members of the administration, the public, including parents and students, as well as teachers who are typically in a strong majority. Typically administration personnel do not receive extra pay and students and members of the public are not paid for their participation.

3. Role of the Administration

The role of the administration is to serve as the liaison between the steering committee and the board of education, and to provide management functions and support for the operation of the steering committee and program subcommittees.

4. Commitments of the Board of Education

The board of education should formally adopt a plan for curriculum improvement, provide time and funding to staff and maintain the plan, take formal action on steering committee and administrative recommendations, adopt annual improvement plans based on curriculum evaluation, and periodically review district curriculum goals.

E. Models of Curriculum Improvement Plans

The purpose of this section is to provide information and examples of two systematic review cycles which are similar in approach to the one described in Section D and represented in Figure 3. The cycles referred to are more specific and more highly developed than the general outlines and principles referred to in Section D. They might be used as beginning references for development or refinement of a systematic curriculum review cycle by a local school district. It is strongly emphasized, however, that each local school district should develop a process which will address local conditions. Factors such as traditions, community involvement, staff, resources, and size are among the many variables which will have an impact on the design of a curriculum review cycle. Nevertheless, some school districts might wish to refer to examples as either a starting point or for comparison purposes. The resources listed below are listed only as examples; many other effective curriculum review programs are also existent in Minnesota and elsewhere.

1. Wisconsin School Evaluation Consortium, Room 409, Education Building, University of Wisconsin-Madison, Madison, Wisconsin 53706 - Director: Dr. Glenda Landon

   The Wisconsin School Evaluation Consortium is an Educational Organization utilized by many school districts in Wisconsin as a means to evaluate curriculum and programs. The consortium has developed a prototype of a program development cycle for adaptation by school districts. Services include tailoring of the model for individual school districts, consulting and development of detailed plans and procedures for all aspects of curriculum development. The Wisconsin School Evaluation Consortium has also assisted several Minnesota School Districts.

2. School District No. 742, 628 Roosevelt Road, St. Cloud, Minnesota 56301, Superintendent Dr. Ron Jandura

   The St. Cloud School System is, with the assistance of the Wisconsin School Evaluation Consortium, developing a program development cycle and a plan for implementation. A draft of the plan, for a school district of some 9,000 K-12 students, is included as Appendix A. It is a detailed plan for a five year systematic curriculum development cycle which also is consistent with PER Law requirements (it goes beyond PER testing minimums) and attempts to address North Central Standards on an ongoing basis. Some features of the draft plan include: inclusion of the PER Committee in the process, a decision system flow chart, descriptions of committee and sub-committee make-up and roles, personnel commitments, time and reward provisions, and budget projections.

3. School District No. 877, Buffalo, Minnesota 55113, Superintendent Mr. Darrell Miller

   Mr. Merrill Fellger, Director of Curriculum, K-12 in the Buffalo Public Schools has participated in and led the development and implementation of a systematic curriculum review process for the 3,600-student Buffalo Public Schools. The process - less complex than the St. Cloud plan - includes a program review and testing calendar, and a three phase curriculum review cycle. Two phases, the Evaluation/Recommendation, and the Implementation Phase are each one year long. The third phase, Operating/Continuous Evaluation is typically 3-4 years in length and is adjustable depending upon variables such as needs of particular programs, budgets, etc. An adaptation of the review cycle and characteristics of various phases in the cycle developed in Buffalo is included in Appendix B.

4. "The Program Audit," R. D. Kimpston, D. J. Barber, and K. B. Rogers, Educational Leadership, May, 1984, pp. 50-60

   "The Program Audit" describes a process by which school systems can lengthen the time between curriculum reviews by using program audits.

Included is an example of a curriculum review cycle which has been stretched to a seven year cycle by including program audits, a model and description of program audits, and a description of a modified version of curriculum mapping. The article is included as Appendix C.

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